UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,581	08/31/2001	Takashi Moriuchi	010923	9413

23850 7590 12/02/2002

ARMSTRONG,WESTERMAN & HATTORI, LLP
1725 K STREET, NW.
SUITE 1000
WASHINGTON, DC 20006

EXAMINER
WALLING, MEAGAN S

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/942,581	Applicant(s) MORIUCHI, TAKASHI	
	Examiner Meagan S Walling	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-5 is/are pending in the application.

4a) Of the above claim(s) 2 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 and 3-5 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

1. Claim 1 is finally rejected under 35 U.S.C. 102(e) as being anticipated by Hardesty et al (US 6,138,056).

Hardesty et al. teaches a sensor for detecting the static and/or dynamic characteristics of the machine tool (column 6, lines 31-33), a reference value storage section for storing predetermined reference values indicative of standard conditions of the machine tool (column 6, lines 33-36), a judgement section for evaluating the static and/or dynamic characteristics of the machine tool on the basis of a detection signal by the sensor and the reference values stored in the reference value storage section for judgement on the acceptability of the characteristics (column 6, lines 35-47), wherein the sensor includes at least one of a rotation sensor for detecting the number of rotations of the main spindle, temperature sensor for detecting the temperature of the machine tool, acceleration sensor for detecting the acceleration acting on the machine tool, displacement sensor for detecting displacement of a predetermined portion of the machine tool, and a noise meter for detecting noise caused by the machine tool (column 5, lines 31-33).

Applicant's argument with respect to claim 1 has been considered, but has been determined to be unpersuasive. Applicant argues that Hardesty et al. does not disclose the maintenance system of claim 1 since it does not disclose each of a rotation sensor for detecting the detecting the number of rotations of the main spindle, a temperature sensor for detecting the temperature of the machine tool, an acceleration sensor for detecting the acceleration acting on the machine tool, a displacement sensor for detecting displacement of a predetermined portion of the machine tool, and a noise meter for detecting noise caused by the machine tool. However, claim 1 reads "wherein the sensor includes at least one of a rotation sensor for detecting the detecting the number of rotations of the main spindle, a temperature sensor for detecting the temperature of the machine tool, an acceleration sensor for detecting the acceleration acting on the machine tool, a displacement sensor for detecting displacement of a predetermined portion of the machine tool, and a noise meter for detecting noise caused by the machine tool." Though Hardesty et al. does not teach each of the sensors, it does teach *at least one of* the sensors, i.e. the displacement sensor for detecting displacement of a predetermined portion of the machine tool.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3 and 4 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Hardesty et al. as applied to claim 1 above and in view of Love et al. (US 5,629,871).

With regard to claims 3 and 4, Hardesty et al. discloses everything disclosed in the claimed invention except a judgement result storage section for storing the judgement result obtained by the judgement section (claim 3) and an estimate section for estimating future static and/or dynamic characteristics of the machine tool based on the judgement result stored in the judgement result storage section (claim 4).

Love et al. teaches storing the total number of abnormal events that have occurred when the operating conditions of the component under analysis exceeded the threshold and further recording the date and time of these occurrences for prediction means (column 7, lines 39-46).

Although Love et al. does not teach a machine tool maintenance system, both Hardesty et al. and Love et al. solve the problem of recording the accuracy of measurements by comparing measurements to known values.

It would have been obvious to one skilled in the art at the time of the invention to combing the teachings of Hardesty et al. and Love et al. It would be more time and cost efficient to predict future characteristics and trends of the machine tool than to have errors occur and be forced to make repairs. A way to predict future events is by observing a trend from the past. So by combining the teachings of Hardesty et al. with the teachings of Love et al., it would be possible to predict future static and/or dynamic characteristics of the machine tool by storing past judgement results.

Applicant's arguments with respect to claims 3 and 4 have been considered but have been determined to be unpersuasive. Applicant argues that claims 3 and 4 are allowable by virtue of their dependence upon an allowable independent claim. However, since claim 1 is not allowable, that argument is now moot.

3. Claim 5 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Hardesty et al. in view of Love et al. as applied to claims 3 and 4 above and in further view of Saito (US 4,644,426) and Ruh (US 4,458,893).

With regard to claim 5, the disclosed invention differs from Hardesty et al. and Love et al. in that it discloses the limitation that a drive signal generator generates a drive control signal to operate the main spindle unit and/or feeder for a trial and transmits the generated drive control signal to the machine tool.

Saito teaches a motor driven in response to a drive signal from a drive signal operator for rotating a spindle (abstract).

Ruh teaches an electric drive control signal for driving a rotary sheet feeder (column 7, lines 3-5).

Although Saito and Ruh do not teach machine tool maintenance systems, Hardesty et al. and Saito and Ruh all teach mechanical machines with moving parts. Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Hardesty et al. with the teachings of Saito and Ruh. The motivation for doing so would be to create a machine tool with a spindle and feeder that are driven by a drive signal generator and then whose drive control signal is transmitted to the machine tool.

Applicant's arguments with respect to claim 5 have been considered and have been determined to be unpersuasive. Applicant argues that the teachings of Saito and Ruh do not cure the defects of the Hardesty et al. reference. However, since everything taught in claim 1 is found in Hardesty et al., it does not contain a defect. In addition, applicant argues that claim 5 is

dependent upon an allowable independent claim. Since claims 1 is not allowable, claim 5 is not dependent upon an allowable independent claim and is therefore not allowable for this reason.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S Walling whose telephone number is (703) 308-3084. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

msw
November 26, 2002

John Barlow
Supervisory Patent Examiner
Technology Center 2800